THE GREAT MARSHES OF THE WHITE NILE

UNIQUE as the Great Sahara Desert of North Africa is for its vast expanse of dry rock and sand, so also are the great Marshes of the White Nile unique in this world for the extent of their reed and water wastes.

In no other quarter of the globe does water, reed, and marsh, cover such a large area, and in no other quarter is the wonderful action of nature, through the agency of wind, water, and vegetable growth, displayed in a more extraordinary manner than in these remote regions, where in a night lakes and lagoons are formed, where rivers are diverted from their channels or crossed by natural bridges; where floating islands appear and disappear as if by magic.

Covering upwards of 35,000 to 40,000 square miles these marshes extend over something of an equi-lateral triangle with its base through Fashoda on the 10° of North Latitude from the 28° to 34° degrees of Longitude East of Greenwich, and with its apex at Lado on the 5° of North Latitude. From Fashoda on the north to Lado on the South, from Mashra al Rak on the West to Nasr on the East.

To anyone who has not experienced the weird sensations of passing through this world of reeds, lagoons and swamps, I will endeavour to give a short description.

Those who have seen the Wular Lake in Cashmere, covered with its floating islands of water-nut, through which the Jhelum flows in tortuous channels from Shrinagar; or the weed covered creeks of Florida can, by magnifying these many times form some idea of the Great Marshes of the White Nile.

After leaving the populated district of Tongo with its Shiluk beehive villages, on the left bank of the White Nile, beyond the

confluence of the Bahr az Ziraf river, the swamp begins to open out. Trees, villages, banks, all disappear in a vast horizon of reed and water, rush and swamp. There is nothing to relieve the unbroken line of flat horizon, nothing on which the eye can rest but the gently swaying heads of the tall papyrus each side of the channel, and the bending stems of the "Um Suf" [1] reed beyond.

As you proceed along the twisting and narrow channel, constantly doubling back on itself, and the sun sets in the west in the sea of reeds and swamp, a feeling of desolation and utter loneliness comes over you. Stillness reigns supreme, except now and then for the snort and splash of some disturbed hippopotamus. As darkness creeps over the great marsh the chorus of myriads of insects swells from the rushes—mosquitoes rise and fall in a thin cloud over the reed tops, and discovering your presence soon attack you in thousands. The "anvil" insect strikes its sharp metallic note in the papyrus close by, and you feel that you are trespassing on an insect world where you are not wanted and where your presence is resented. The damp hot air is gently stirred by the evening breeze, but you scent malaria and instinctively seek your evening dose of quinine and the hospitality of your cabin, and close your eyes to the desolation of the world outside.

It was towards the close of the year 1898, after the great battle of Omdurman, and during the period of the Fashoda question, that I had the good fortune to be employed in making compass sketches of the then navigable channels in these regions. In that year the waters were higher than they have been since.

The Bahr al Jabl was completely blocked with sudd, and, as a consequence, the marshes and water extended further than they probably do at the present time. Now, thanks to the hard work of Colonel Peake, Major Matthews and their men, steamers are able to go without difficulty to Gondokoro at a time of year when there are no mosquitoes and no malaria. There is therefore no obstacle to anyone wishing to see the greatest marshes in the

[1] "Um Sūf" is the Arabic name for this reed and means "the mother of wool," owing to the white fluffy fleece which surrounds the seeds. Its generic name is *Vossia*. The tall reed with the great pampas-like plumes is *Phragmites communis*. —ED.

world. In the months of January and February the weather is fairly cool and dry, so that there is nothing to fear from climatic conditions.

The rivers which flow into or through these marshes are :

The Bahr Ghazal with its tributaries, the Bahr al Hamr, the Jūr, the Kit, the Tonj or Jau, from west.

The Rōl, The Bahr al Jabl with its tributaries—the Yei and Jafari rivers, and its offspring, the Bahr az Zirāf, as well as numerous unnamed streams from south. While the Sobat with its tributaries comes in from east.

Lake No (probably a contraction from Lake Nuer) or the Magren al Buhur (Arabic—"meeting of the waters") is the cup of the great basin which collects the waters out of which the White Nile proper starts on its peaceful journey of 612 miles to Khartum, picking up the waters of the Zirāf, Lolle, and Sobat in the first 50 miles of its course.

The Bahr al Jabl, which was entirely blocked till the end of 1900, overflowed its banks in all directions, but the main volume of its waters was in 1898 drawn off by the Bahr az Zirāf from a "spill" near Shambe, and this latter river was navigable for a length of 280 kilometres. The level of its waters was several feet above the normal height and flooded the country on both sides for a long distance. Trees were killed by their long immersion, and it was with very considerable difficulty that fuel could be found on dry land anywhere.

Like the Bahr al Jabl its course is most tortuous, bending back in loops on itself, so that it was often possible in that year to take a short cut of only a few yards to avoid a bend of perhaps a mile or two in length. There is less sudd in the Bahr az Zirāf than most of these rivers, presumably because few "Mayahs" or lagoons are met with.

It is these "Mayahs," especially on the Bahr al Jabl, which are the nurseries for the sudd proper.

In these open sheets of water, varying from 3 to 10 feet deep, the surface, where there is no stream, gets covered with floating reeds and weeds which spring up from the bottom. In the summer and early autumn months, when violent squalls and winds sweep across the open marshes, the resistance offered by the tall stems is so great that large patches of reed and weed get detached

from the sides and, breaking away from their loose hold on the shallow bottom, drift before the wind from side to side of the lagoons.

At times these floating islands, often several acres in size, get blown into the river channel whence they are carried down with the stream, turning round and round as they brush the reeds at the sides. Eventually a narrow point is reached, the mass blocks, and other patches following are piled up and underneath by the force of the water finding its passage closed. Sometimes a mass, often many feet in thickness, is wedged tight in the channel. The water swirls through as best it can underneath and overflows into the marshes on each side, making new lagoons. As each fresh piece of sudd comes down the block gets tighter and thicker; at last it often becomes a thickness of several metres as solid as hard ground, on which men and animals can walk. The stream continues underneath. These blocks last for years; sometimes an extra strong flood is able to break them away, but they often stop till removed by the hand of man.

Gessi Pasha in his account of how his party were caught in 1881, and nearly starved in these regions, gives a graphic description of the dangers to be met with in combating the sudd.

Sir W. Garstin found his return blocked in a similar manner in 1900, but was able with the assistance of a steamer down stream of the block to extricate himself.

It is extraordinary how few birds are seen. In November, however, especially on the Ziraf River, thousands of black and white Ibis may be seen making their nests in the low trees near the river bank—geese, duck, teal, great and lesser bustard are also met with at this season in great quantities. The handsome black and white fish-eagle can be heard calling his mate from some old stump, and the great *Balæniceps rex* (probably the rarest bird in Zoological Gardens) can be seen standing like a solitary sentinel in that portion of the swamp which he looks upon as his own special reserve and sanctuary.

There is a certain fascination about these birds, found, I believe, in no other quarter of the globe.

Fish abound and are caught and speared by the natives in numbers.

Where dry land borders on the marshes, elephant, giraffe,

ostrich, and sometimes buffalo disport themselves, while the hippopotamus is met in most of the backwaters and lagoons, and at times races through the swamp to get into the river ahead of a steamer.

Sir William Garstin, whose exhaustive report on these regions was presented to both Houses of Parliament in 1901, states that the amount of water which flows out of the marshes differs from that which flows in above the swamps by 328,744 metres cube per second. This is rather more than half the volume which flows in, viz., 622,965 metres cube per second in the Bahr al Jabl alone. The amount of water which in consequence is absorbed by evaporation is beyond comprehension.

Sir William proposes two schemes for the prevention of the overflow of the water from the main stream into these marshes. If, in time to come, sufficient funds are forthcoming to carry either of these out, it may be possible in future years to see smiling rice fields and cotton plantations where to-day the *Balæniceps rex* keeps his solitary guard and the mosquito his undisturbed lair.

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Note.—The spelling of the Arab river and place names in this article differs in some instances from that in the author's M.S., as it has been brought into uniformity with the recognised system of rendering Arabic into English followed by the Indian Government. Thus *Jabl* (mountain) is given as the rendering of the Arabic جبل in preference to *Jebel*; *al* (ال) in preference to *el*, and so on.—ED.